Evan Christensen

Stephen Marcel

Java Test Cases:

**Part 7: inserts**

**Select “2”** from main menu to navigate to “Add or delete an element from query”

**Select “1”** to navigate to “Add New Content”

**Select 1:** new course: enter similar entries

00555, Big Data on Parade, advanced, Explore and have lunch with large databases, active, 1230.76, 00511, University of basquaise

**Select 3:** new knowledge\_skill: enter similar entries

10800, SQL programming, sequel like you've never seen before, intermediate, 00555

10799, Data Models, Data on the cover of vogue, intermediate, 00555

**Select 2:** new teaches: enter similar entries

00555, 10800

00555, 10799

00555, 10832

**Select 4:** new certificate: enter similar entries

1055, Data Miser, null, University of basquaise

**Select 5:** new issues: enter similar entries

00555, 1055

**Select 6:** new company: enter similar entries

110011, Dunder Mifflin, Scranton, Slough ave, 1725, suit 200, PA, USA, 18510, Paper, www.dundermifflinpaper.com

**Select 7:** new position: enter similar entries

00101, IT guy, null, 31.05, hourly, CS006, 110011

**Select 8:** new pos\_requires: enter similar entries

10799, 00101, null

10832, 00101, null

10965, 00101, null

**Select 9:** new requires\_cert: enter similar entries

00101, 1055

**Select 10:** new person: enter similar entries

10011, Rick, James, Townsville, Finch st, 230, Rl 102, OR, USA, 23089, IluvGldFishesCusThySoDelishus@hotmail.com

**Select 11:** new works: enter similar entries

10011, 00101, 09/12/2017, null

**Select 12:** new has\_skill: enter similar entries

10011, 10799

10011, 10832

10011, 10965

**Select 13:** new has\_cert enter similar entries

10011, 1055

Part 8d.

1. List a specific company’s workers by names.

**Enter:** 409382 (comp\_id)

**Returns:**

first\_name last\_name

Linsey Grumbacher

2. List a company’s staff by salary.

**Enter:** 687331 (comp\_id)

**Returns:**

Per\_id first\_name last\_name pay\_rate

1000A Bucky McLame 100000.0

3. List the average annual pay of each company.

**Returns:**

comp\_name annual\_pay

Initech 100000.0

Cyber Security by Bubba 70000.0

Ninth Ward Programming 67200.0

Johns Computer Repair 40000.0

4. List the average, maximum and minimum annual pay of each industry.

**Returns**:

ind\_title avg\_sal max\_sal min\_sal

Systems Software 63400.0 75000.0 48000.0

Application Software 77500.0 85000.0 70000.0

IT Consulting and Service 83333.3333333 110000.0 40000.0

5-1. (5a)Find the biggest employer, industry or industry group in terms of number of employees.

**Returns**:

Com\_name

Johns Computer Repair

5-2. (5b)Find the biggest industry in terms of number of employees.

**Returns**:

Com\_name

Database Management

5-3. (5c)Find the biggest industry group in terms of number of employees.

**Returns**:

ind\_title employee

IT Service 3

Software 2

6. Find the job distribution among industries by number of employees.

**Returns**:

ind\_title employee

IT Service 3

Software 2

7. Find all the job positions a person is and has worked.

**Enter**: 1000A (per\_id)

**Returns**:

pos\_code pos\_name

00234 Software Developer

07360 Computer Technician

8. List a person’s knowledge and skills.

**Enter**: 10010 (per\_id)

**Returns**:

Per\_id skill\_code ks\_code  
 10010 Advanced Java Programming 10833   
 10010 Data Structures 10965   
 10010 Python Programming 10987   
 10010 Algebra 11200

**Enter**: 1000A (per\_id)

**Returns**:

Per\_id skill\_code ks\_code  
 1000A Python Programming 10987

9. Show the distribution of skill of a person by number of skills in each of the cc\_code.

**Enter**: 10010 (per\_id)

**Returns**:

cc\_code dist

DDA 3

DA 1

**Enter**: 1000A (per\_id)

**Returns**:

cc\_code dist

DA 1

10. List skills required for a position.

**Enter**: 00125 (pos\_code)

**Returns**:

cc\_code dist

Java Programming 10832

Python Programming 10987

**Enter**: 00444 (pos\_code)

**Returns**:

cc\_code dist

Algorithms 10955

Python Programming 10987

11. List the required skill categories of a job category.

**Enter**: CS004 (job\_cate)

**Returns**:

job\_cate cc\_code

CS004 DA

CS004 ESAI

**Enter**: CS001 (job\_cate)

**Returns**:

job\_cate cc\_code

CS001 DA

CS001 DDA

CS001 ESAI

12. List a person's missing skills for a position.

**Enter**: 00444(pos\_code), 1000D (per\_id)

**Returns**:

ks\_code cert\_code

10889 null

10965 null

10987 null

**Enter**: 00999 (pos\_code), 1000A (per\_id)

**Returns**:

ks\_code cert\_code

10832 null

10833 null

10955 null

10965 null

11200 null

13. List the courses that alone teach all of the missing skills a person has for a position.

**Enter**: 06238 (pos\_code), 10010 (per\_id)

**Returns**:

c\_code title cert\_code

00525 Advanced Information Assurance null

00777 Mega Course null

**Enter**: 00126 (pos\_code), 1000A (per\_id)

**Returns**:

c\_code title cert\_code

00333 fake 1 null

00334 fake 2 null

00503 Advanced Object Oriented Programming 0200

00503 Advanced Object Oriented Programming null

00511 Graph Search, Shortest Paths, and Data Structures null

14. Find the cheapest course that makes up a person’s skill gap for a position.

**Enter**: 00126 (pos\_code), 1000B (per\_id)

**Returns**:

c\_code title price institution

00511 Graph Search, Shortest Paths, and Data Structures 778 Coursera

**Enter**: 00125 (pos\_code), 10010 (per\_id)

**Returns**:

c\_code title price institution

00502 Intro to Java 977.57 University of New Orleans

15. Find the position with the highest pay rate that a person is qualified for.

**Enter**: 10010 (per\_id)

**Returns**:

pos\_name annual\_pay

Software Developer 100000

**Enter**: 1000A (per\_id)

**Returns**:

pos\_name annual\_pay

Network Specialist 75000

16. List all the people who are qualified for a position.

**Enter**: 00126 (pos\_code)

**Returns**:

first\_name last\_name email

John Redcorn [headacheCure69@gmail.com](mailto:headacheCure69@gmail.com)

**Enter**: 00125 (pos\_code)

**Returns**:

first\_name last\_name email

John Redcorn headacheCure69@gmail.com

17. Find all people who are only missing k skills for a position.

**Enter**: 00125 (pos\_code), 1 (number of missing skills)

**Returns**:

Per\_id missing\_sk

1000A 1

1000B 1

10010 1

**Enter**: 00444 (pos\_code), 1 (number of missing skills)

**Returns**:

Per\_id missing\_sk

11111 1

18. List the person/persons who are missing the least skills for a position.

**Enter**: 00999 (pos\_code)

**Returns**:

Per\_id least\_numb

10010 2

**Enter**: 00126 (pos\_code)

**Returns**:

Per\_id least\_numb

10010 0

11111 0

19. List skills and the number of people who are missing these skills for a position.

**Enter**: 00999 (pos\_code)

**Returns**:

Need missing\_people

11200 3

10832 2

10965 2

10833 1

10955 2

**Enter**: 00125(pos\_code)

**Returns**:

Need missing\_people

10832 2

10987 1

20. Find all people who hold or once held a position.

**Enter**: CS005 (job\_cate)

**Returns**:

Per\_id first\_name last\_name title hire\_date leave\_date

1000A Bucky McLame Web Developer 08/10/1996 12/12/2012

1000B Greg Black Web Developer 07/02/2017 null

1000B Greg Black Web Developer 07/02/1992 10/10/2016

1000C Linsey Grumbacher Web Developer 11/02/2001 12/27/2005

10010 Kip Irvine Web Developer 01/11/2011 null

**Enter**: CS003 (job\_cate)

**Returns**:

Per\_id first\_name last\_name title hire\_date leave\_date

1000C Linsey Grumbacher Database Developer 01/02/2006 02/27/2018

1000A Bucky McLame Database Developer 08/10/2013 null

21-1. (25a)Find the number of workers whose earnings increased.

**Returns**:

pay\_increase  
 2

21-2. (25b)Find the number of workers whose earning decreased.

**Returns**:

Pay\_decrease

4

21-3. (25c)Find the ratio of jobs increase and decrease.

**Returns**:

Pay\_ratio

2:4

21-4. (25d)Find the average wage changing rate of workers in a specific field.

**Enter**: 45102010

**Returns**:

Rate\_of\_change

2

**Enter**: 45103020

**Returns**:

Rate\_of\_change

0

22. Find all the unemployed people who once held a job position.

**Enter**: 00125 (pos\_code)

**Returns**:

per\_id pos\_code hire\_date leave\_date

1000D 00125 06/03/2002 08/10/2005

**Enter**: 07360 (pos\_code)

**Returns**:

per\_id pos\_code hire\_date leave\_date

1000E 07360 08/21/2003 08/30/2008

23. Find the job categories that have the most openings due to lack of qualified workers.

**Returns**:

Job\_cate

CS005

24. Find the course sets that their combination covers a persons missing skill gap for a position.

**Enter**: 10010 (per\_id), 00999 (pos\_code)

**Returns**:

Course\_1 Course\_2 Course\_3 Total\_cost

00502 00510 null 1727.55

**Enter**: 10010 (per\_id), 00999 (pos\_code)

**Returns**:

Course\_1 Course\_2 Course\_3 Total\_cost

00510 00701 null 2240.24

25. Find the course sets that teaches every skill required by job position of the job categories found in Query #23.

**Returns**:

title c\_code numb\_per\_course\_qual

Networking 00522 5

Mega Course 00777 5

26. List all direct and indirect courses a person has to take to be qualified for a job.

**Enter**: 00444 (pos\_code) 10010 (per\_id)

**Returns**:

course\_id req\_skill

00701 10889

00510 10955

00334 10955

00622 11203

00623 11225

**Enter**: 00999 (pos\_code) 10010 (per\_id)

**Returns**:

course\_id req\_skill

00333 10832

00502 10832

00522 10856

00777 10856

00777 10932

00510 10955

00334 10955

Part 8c.

Select “3” from main menu to navigate to “New business process”

Select “3” to navigate to “Find qualified candidates for position”

Enter pos\_code “00999”

Will match with per\_id 10010: Kip Irvine

-Missing skills: 10832 java programming

10955 Algorithms

Part 8b.

Select “3” from main menu to navigate to “New business process”

Select “2” to navigate to “Hunt for a job”

Enter per\_id “10010”

Will match with position 00234: Software Developer 100000

Pos 00234 requires → Skills: 10833 and 10965

Person 10010 has → Skills: 10833, 10965, 10987 and 11200

Part 8a

Select “3” from main menu to navigate to “New business process”

Select “1” to navigate to “Hire a new employee into a company”

Enter per\_id “11111” then pos\_code “00444”

Enter the transcript file name : “Transcript.csv”

Enter full path: “/home/stephen/Documents/SourceCode/Databases/workForceDataBase/”

Will then update takes, has\_skill, and has\_cert relations for each entry in the transcript

Next, “works” relation will be updated

Finally the inserts will be committed.

If any skills are missing from the position the missing courses and their prereqs

Using per\_id 11111 and pos\_code 00444 should have the following missing skills:

Course: 00701, Skill: 10889, Title: Machine Learning, Price: 1490.26, Institution: University of New Orleans

Course: 00621, Skill: 11200, Title: Algebra I, Price: 1450.26, Institution: University of New Orleans

Course: 00622, Skill: 11203, Title: Trig, Price: 1450, Institution: University of New Orleans

Course: 00623, Skill: 11225, Title: Calculus, Price: 1450.77, Institution: University of New Orleans